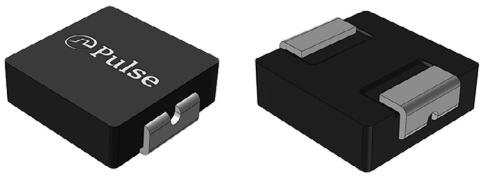
SMT Power Inductor

High Current Molded Power Inductor - PA5402 & PM5402 Series

Pulse
a YAGEO company



- **Height:** *2.2mm Max*
- **Footprint:** *4.7mm x 4.31mm Max*
- **Current Rating:** *up to 12A*
- **Inductance Range:** *0.1 to 22uH*
- *High current, low DCR, and high efficiency*
- *Shielded construction and compact design*
- *Minimized acoustic noise and minimized leakage flux noise*
- *200 Vdc Isolation Between Terminal and Core*
- *Available in Commercial (PA) and Automotive (PM) grades*

Electrical Specifications @ 25°C - Operating Temperature -55°C to +125°C

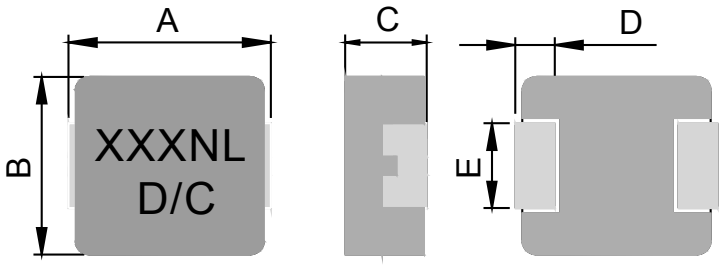
Commercial[6,7]	Automotive[6,7]	Inductance[5] 100KHz, 1.0V	Rated[3] Current	DC Resistance		Saturation[2] Current	K Factor for CoreLoss
			TYP.	TYP.	MAX.	TYP.	
		uH±20%	A	mΩ	mΩ	A	
PA5402.101NLT	PM5402.101NLT	0.10*	12	3.2	4	35	783.8
PA5402.181NLT	PM5402.181NLT	0.18*	13.5	4.6	5.4	28	524.0
PA5402.221NLT	PM5402.221NLT	0.22*	13	6.6	7.3	24	663.2
PA5402.331NLT	PM5402.331NLT	0.33	10	7.8	8.6	18	655.0
PA5402.471NLT	PM5402.471NLT	0.47	8	11.2	14	12	456.6
PA5402.561NLT	PM5402.561NLT	0.56	7.3	13.5	16	10	456.6
PA5402.681NLT	PM5402.681NLT	0.68	7	16	19	10	386.4
PA5402.102NLT	PM5402.102NLT	1.0	5	22	27	8.5	295.5
PA5402.122NLT	PM5402.122NLT	1.2	4.8	25	30	7.8	221.9
PA5402.152NLT	PM5402.152NLT	1.5	4.5	34.8	42	7	264.4
PA5402.222NLT	PM5402.222NLT	2.2	4	51	61	6	164.0
PA5402.332NLT	PM5402.332NLT	3.3	3.5	69	76	4	139.7
PA5402.472NLT	PM5402.472NLT	4.7	2.6	95	105	3.5	123.7
PA5402.562NLT	PM5402.562NLT	5.6	2.2	112	125	3	135.7
PA5402.682NLT	PM5402.682NLT	6.8	2.1	150	172	2.8	79.4
PA5402.822NLT	PM5402.822NLT	8.2	2	158	180	2.5	75.3
PA5402.103NLT	PM5402.103NLT	10	1.8	215	243	2.3	65.3
PA5402.153NLT	PM5402.153NLT	15	1.5	325	374	1.9	64.4
PA5402.223NLT	PM5402.223NLT	22	1.2	470	500	1.4	57.5

Notes:

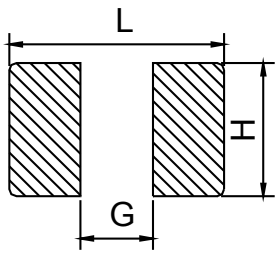
1. Actual temperature of the component during system operation (ambient plus temperature rise) must be within the standard operating range.
2. The saturation current is the current at which the initial inductance drops approximately 30% at the stated ambient temperature. This current is determined by placing the compnent in the specified ambient environment and applying a short duration pulse current (to eliminate self-heating effect) to the component.
3. The rated current is the DC current required to raise the component temperature by approximately 40˚C. Take note that the components' performance varies depending on the system condition. It is suggested that the component be tested at the system level, to verify the temperature rise of the component during system operation.
4. The part temperature (ambient+temp rise) should not exceed 125˚C under worst case operating conditions. Circuit design, PCB trace size and thickness, airflow and other cooling provisions all affect the part temperature. Part temperature should be verified in the end application.
5. Please note that the inductance tolerance of all parts are ±20%, except those indicated by an * which are +/- 30%.
6. Parts shown in bold are standard catalog parts and are available through sample stock and distribution. Parts in lighter font are available but are not necessarily held in sample stock or distribution and lead times may be longer. Please contact Pulse for availablity.
7. The PM prefix parts are AEC-Q200 qualified and has full automotive IATF16949 certification. The mechanical dimensions are 100% tested in production but do not necessarily meet a product capability index (Cpk) 1.33 and therefore may not strictly conform to PPAP.
8. Special characteristics

Mechanical

PA5402/PM5402



FINAL LAYOUT

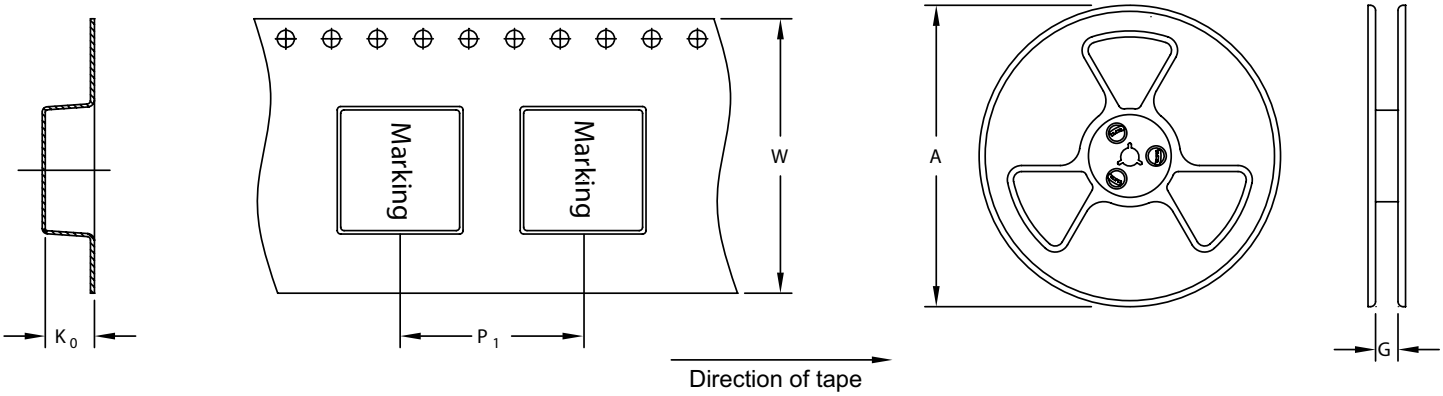


SUGGESTED PAD LAYOUT

Series	A	B	C	D	E	L	G	H
PA5402/PM5402	4.45+/-0.25	4.06+/-0.25	1.8+/-0.2	0.76+/-0.3	2.0+/-0.2	5.2	2.2	2.4

All Dimensions in mm.

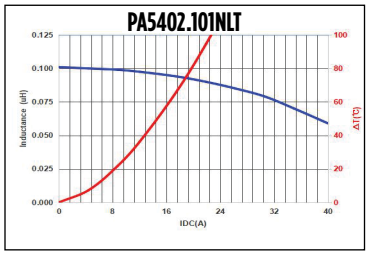
TAPE & REEL INFO

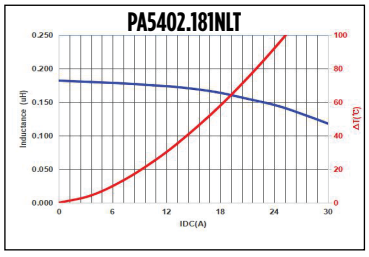


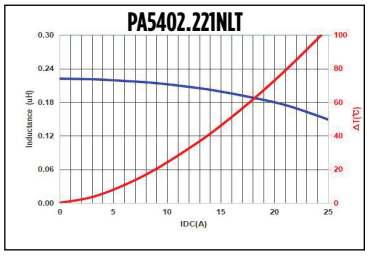
SURFACE MOUNTING TYPE, REEL/TAPE LIST						
	REEL SIZE (mm)		TAPE SIZE (mm)			QTY
	A	G	P_1	W	K_0	PCS/REEL
PA5402/PM5402	Ø330	12.4	8	12	2.3	3000

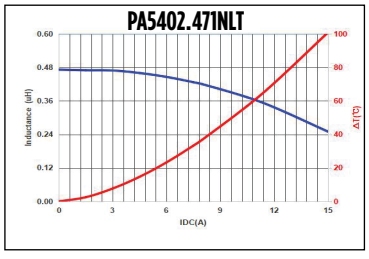
Typical Performace Curves

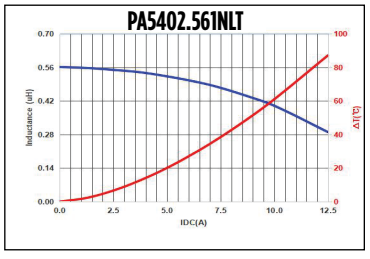
PA5402/PM5402



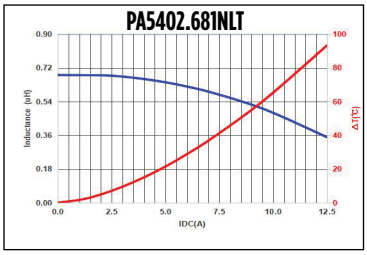




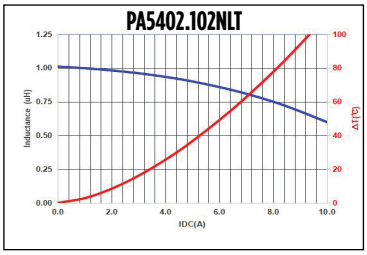




PA5402.681NLT



PA5402.102NLT



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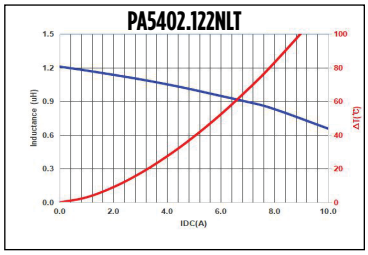
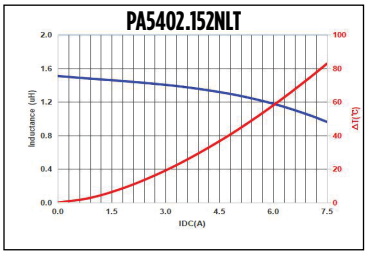
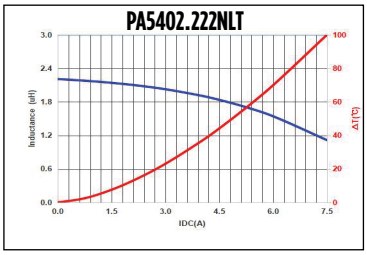


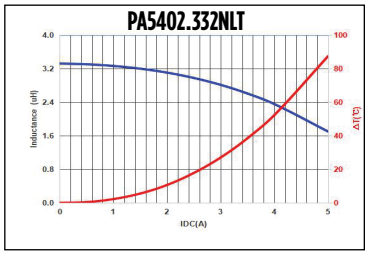
PA5402.152NLT



PA5402.222NLT



PA5402.332NLT



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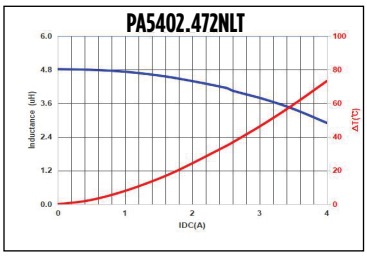
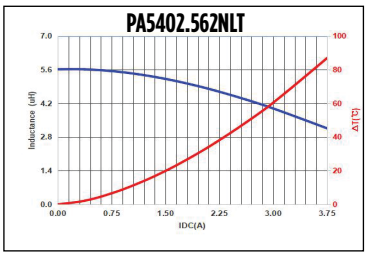
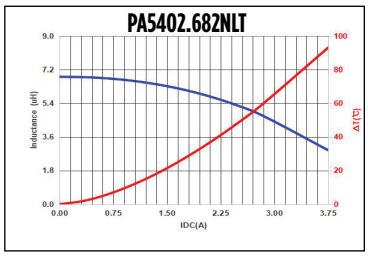


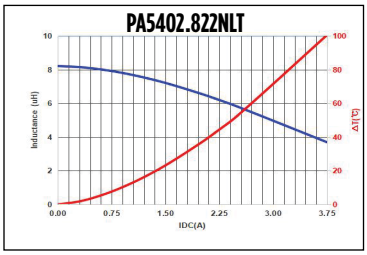
PA5402.562NLT



PA5402.682NLT



PA5402.822NLT



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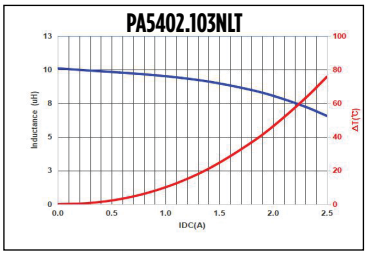

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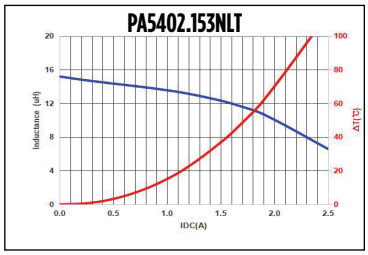

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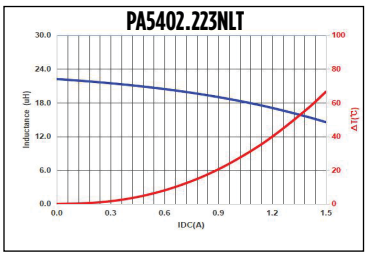
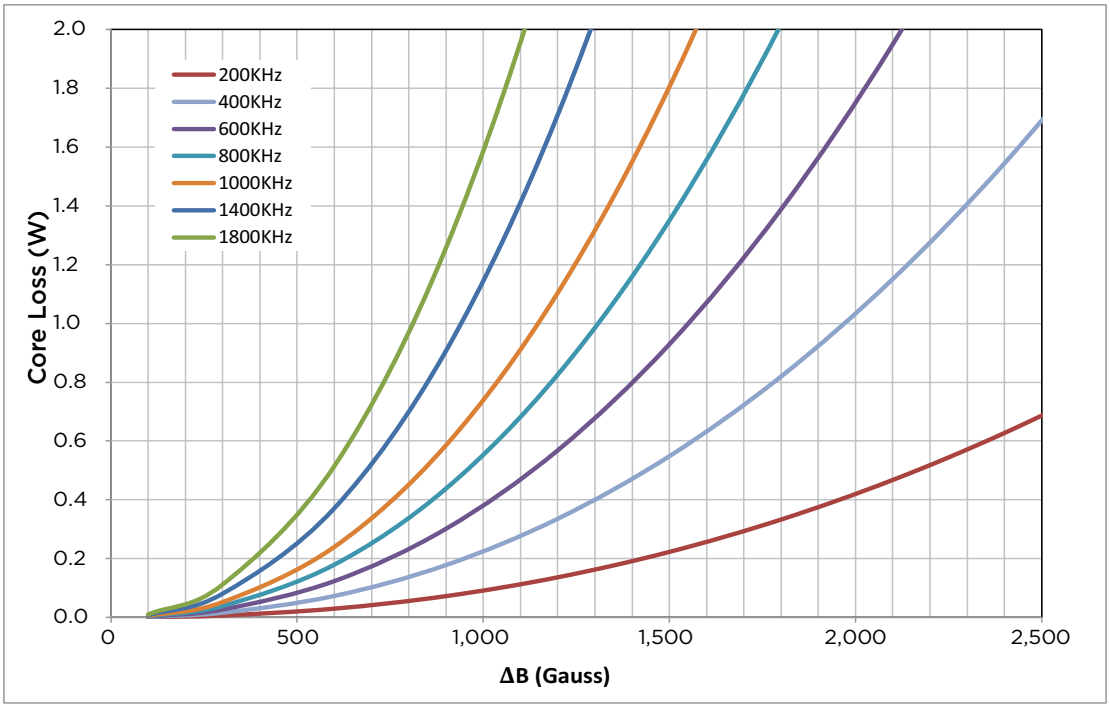


CoreLoss versus Flux Density



$$\Delta B = K * L(uH) * \Delta I(A)$$

For More Information:

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